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1933–34

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# OSTRACODA

BY

H. GRAHAM CANNON, Sc.D., F.R.S.

*The University, Manchester*

WITH THREE TEXT-FIGURES

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# OSTRACODA

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WITH THREE TEXT-FIGURES.

THE following is a list of the Ostracods collected by the John Murray Expedition to the Indian Ocean, 1933–34. Apart from two representatives of the genus *Gigantocypris*, including one valuable new species, there were no other specimens of any particular interest.

## Family CYPRIDINIDÆ.

### Sub-family CYPRIDININÆ.

### Genus *Cypridina* Milne-Edwards.

*Cypridina* (*Macrocypridina*) *castanea* G. Brady.

OCCURRENCE :

St. 172. N. 100. 850–0 m. 1500 m.w.o. One (juv.).
St. 186. N. 100. 250–0 m. 510 m.w.o. One (juv.).
St. 186. N. 100. 575–0 m. 880 m.w.o. One (juv.).

REMARKS.—All three specimens showed the characteristic lack of pigmentation and more globular shape than the adult.

### Genus *Gigantocypris* G. W. Müller.

*Gigantocypris mülleri* Skogsberg.

OCCURRENCE :

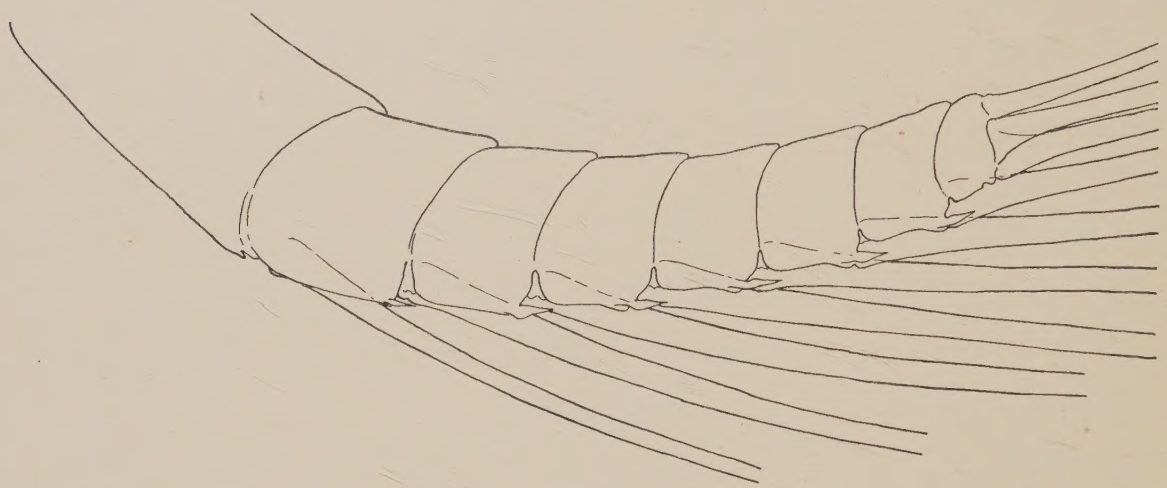
St. 61. N. 200. 2000–0 m. 2265 m.w.o. One (full sized, somewhat damaged).
St. 131. N. 200. 2500–0 m. Vertical haul. One (juv.).

REMARKS.—I have pointed out elsewhere (1940, p. 190) that the differences between Skogsberg's type *G. mülleri* and Müller's *G. agassizii* are very unsatisfactory. The only character of any useful value is that in the original type described by Müller, the conical spines present at the bases of certain natatory setæ of the antennal exopodite are absent while they are present in Skogsberg's form (Text-fig. 1). According to this distinction the single adult John Murray Expedition specimen must be named *G. mülleri*. I have

compared it with the very complete account given by Skogsberg (1920) and can find no appreciable difference. Unfortunately the tips of both second trunk limbs were absent, so that it was not possible to count the number of cleaning bristles, but, as I have pointed out, this is probably of little significance.

Müller (1895) merely states that in his form the spines are missing from the bases of the natatory setæ (p. 158). Skogsberg (p. 216) goes further and says that the exopodite has no basal spines on the 3rd to the 9th joint. In the John Murray specimen and in all the "Discovery" specimens that I have examined the spines are present on the 3rd to the 8th segment. There is even a trace of a spine on the 2nd joint, but never any on the 9th.

Until the type specimens of *G. agassizii* can be re-examined it is of course impossible to settle whether or not Müller's statement as to the lack of these spines was based on inaccurate observation. I think, however, that this is extremely likely as these spines are sometimes very difficult to make out. The angle that each spine subtends at its apex



TEXT-FIG. 1.—*Gigantocypris mülleri*. Exopodite of antenna to show spines at the bases of the natatory setæ. × 60.

agrees with the angle at which the natatory setæ project from the axis of the exopodite. Because of this, if the exopodite is mounted one way up the spines are practically invisible in any ordinary mounting medium.

Skogsberg refers to his type as the Atlantic form, and to the original species as the Pacific form. The John Murray Expedition specimen upsets this distinction, as without doubt it agrees with Skogsberg's form, and yet was found in the Indian Ocean. Müller (1906, p. 135), however, did describe *G. agassizii* as occurring in the Pacific. Skogsberg suggests (1920, p. 216) that this diagnosis was incorrect, for he points out that the picture of the whole animal published by Müller was undoubtedly different from his own Pacific form. I feel certain that the specimen figured by Müller was badly distorted, not so much from the side view, in which the profile is different from any good specimen of *Gigantocypris* that I have seen, but from the ventral view, in which the free edges of the valves are gaping apart. This never occurs in an undistorted specimen.

The only other species of *Gigantocypris* hitherto described is *G. pellucida* Müller. This was first described from a single specimen caught at the same time as the original

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*G. agassizii* in the Pacific. However, Fowler (1909), Lüders (1909) and Skogsberg (1920) all take the view that this form is actually the immature stage of *G. agassizii*. Another specimen collected by Scott (1911) is taken by Skogsberg to be the same as his *G. mülleri*, although from the meagre description given by Scott I find it difficult to see how Skogsberg places it in one species rather than the other.

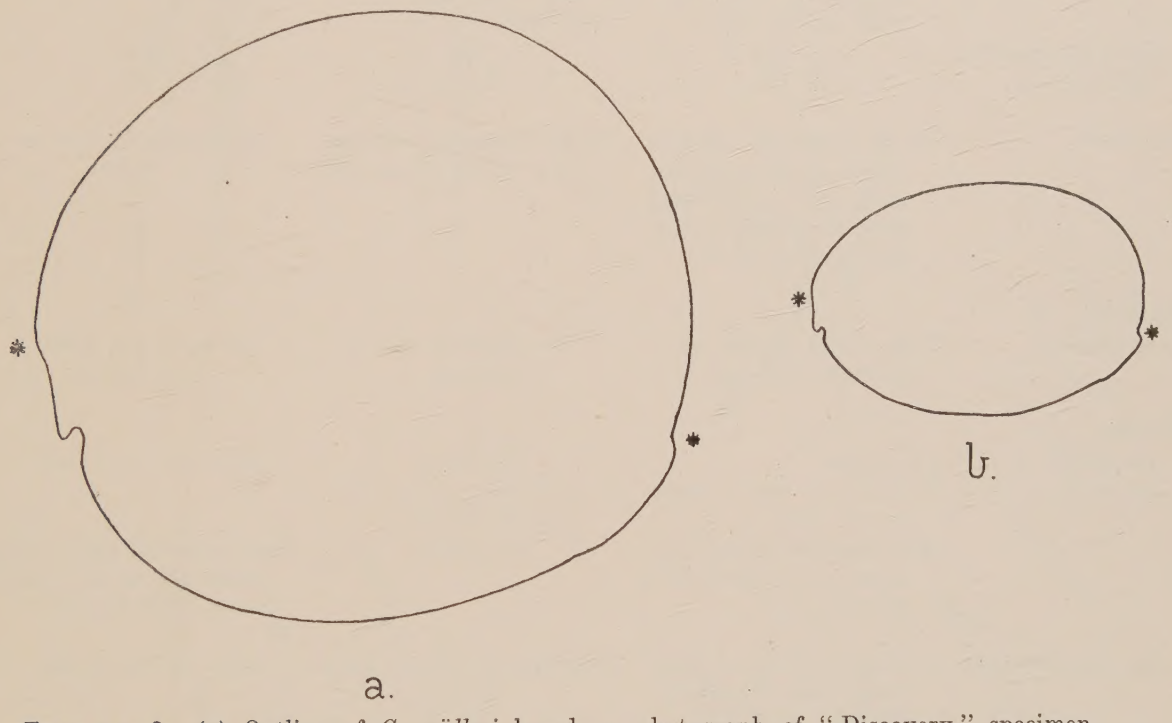
There is thus, I consider, considerable evidence that the three forms previously described as separate species really represent one widespread species.

*Gigantocypris dracontovalis* n. sp.

Occurrence :

St. 98. N. 200. 2800–0 m. 2800 m.w.o. One ♀.

Remarks.—The single specimen collected at Station 98 with 2800 metres of wire out was a large ovoid ostracod with an extremely delicate shell. It clearly belonged to the




Text-fig. 2.—(*a*) Outline of *G. mülleri* based on photograph of " Discovery " specimen. × 4·3. (*b*) Approximate outline of *G. dracontovalis* n. sp. × 4·3. The asterisks indicate the limits of the ventral opening.

genus *Gigantocypris*, because it possessed the enormous and unique nauplius eye. In shape, however, it was much less spherical, resembling in profile the ovoid shape of an ordinary Cypridinid. That it was a distinct form and not merely a young *Gigantocypris mülleri* was shown by the fact that it was a ripe female carrying embryos, and these were only about half the size of the embryo of *G. mülleri*. The most interesting feature was that the opening between the two valves was approximately half of the profile circumference (Text-fig. 2). This could not be measured accurately owing to the delicate nature of the valves, but it was clearly considerably longer than that of *G. mülleri*. Müller (1912, p. 23),

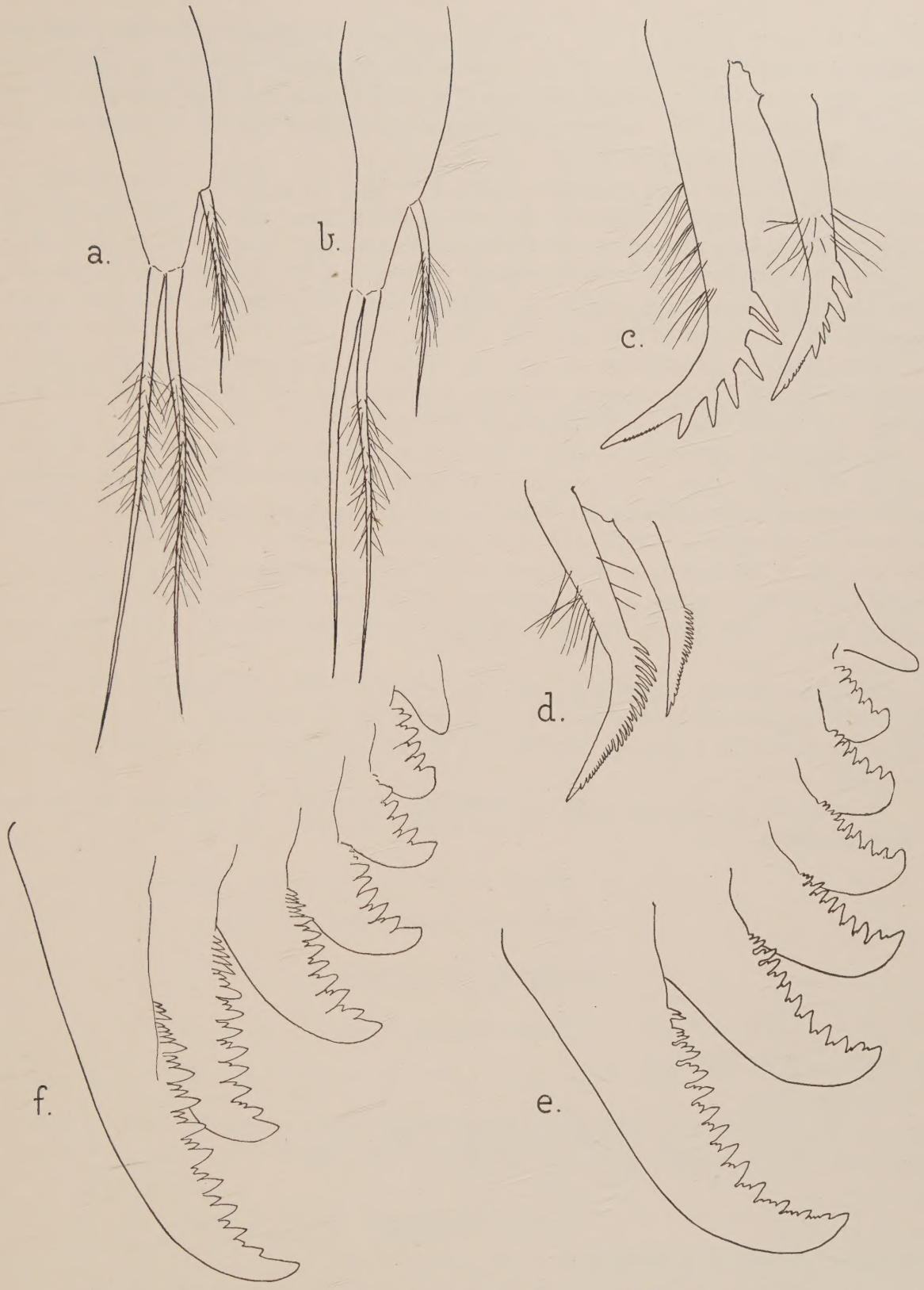
in his diagnosis of the genus *Gigantocypris*, included the statement that the two valves of the shell are fused for approximately two-thirds of the periphery.

I have mounted all the limbs of one side of the specimen, and from a study of these and of the valves there is little doubt that it is the same as two specimens described by Skogsberg as a variety *minor* of his new species *G. mülleri* (1920, p. 219). More particularly it agrees with the specimen which Skogsberg calls species " a."

I give below a table of the most useful distinguishing characters, comparing the Murray Expedition specimen on the one hand with Skogsberg's species " a," and on the other with *G. mülleri*.

| | *G. mülleri.* | *G. mülleri* var. *minor.* | *G. dracontovalis* n. sp. |
|---|---|---|---|
| Shell : | | | |
| Dimensions | Length : height : breadth 10 : 9 : 9 (Text-fig. 2) | 10 : 8 : 7 | 10 : 7 : 7 (Text-fig. 2). |
| Antennal notch | Numerous spines (see Skogsberg, 1920, fig. xxix, 19, p. 214) | Few spines (see Skogsberg, 1920, fig. xxx, p. 221) | Same as var. *minor*. |
| Spines on rostrum | 75–125 | 45 | 45 |
| Spines on list | 75–125 | 40–60 | 48 |
| Mandible : | 20–30 cleaning bristles which all show various styles of pectination (see Skogsberg, 1920, fig. xxix, 21, 22, 23) | 10–14 cleaning bristles, all of which are smooth | 14 cleaning bristles as var. *minor*. |
| Maxillule : | | | |
| Exopodite | Both distal bristles are plumose (Text-fig. 3) | One distal bristle is smooth | Same as var. *minor* (Text-fig. 3). |
| Maxilla : | | | |
| 1st endite | 14 bristles | 9 bristles | Same as var. *minor*. |
| 3rd endite | Penultimate spine bears lateral hairs | Penultimate spine without lateral hairs | ,, ,, |
| | Most posterior spine bears relatively few stout teeth (Text-fig. 3). | Not stated | Most posterior spine bears relatively many slender teeth (Text-fig. 3). |
| 1st exopodite joint | 6 bristles in front of main tooth (see Skogsberg, 1920, fig. xxvii, 13) | 3 bristles anterior to main tooth | Same as var. *minor*. |
| | Main tooth characteristic pattern (Text-fig. 3) | Not figured | Main tooth characteristic pattern (Text-fig. 3). |
| Trunk limb 2 : | | | |
| Comb | 90–150 teeth | 40 teeth | Same as var. *minor*. |
| Bristles | 1–10 bells | 3–9 bells | ,, ,, |
| Embryos : | | | |
| Number | 57–85 | 27 | 37 |
| Dimensions | 2·1 × 1·9 mm. | Not stated | 1·5 × 1·1 mm. |

Skogsberg suggests (1920, p. 219) that his specimen was one " whose development has been checked by unfavourable conditions." That this is not so is shown by the size




TEXT-FIG. 3.—(*a*) Exopodite of maxillule, *G. mülleri*. × 49. (*b*) Exopodite of maxillule, *G. dracontovalis* n. sp. × 109. (*c*) Last two claws on 3rd endite of maxilla, *G. mülleri*. × 109. (*d*) Last two claws on 3rd endite of maxilla, *G. dracontovalis* n. sp. × 172. (*e*) Main tooth, *G. mülleri*. × 172. (*f*) Main tooth, *G. dracontovalis* n. sp. × 322.

of the embryos of the new species. They are markedly smaller—approximately half the volume of those of *G. mülleri*. Now a pædogenetic *G. mülleri*—for that is what Skogsberg is suggesting—while it could reproduce at an earlier stage, would still produce normal embryos of the usual size. Unfortunately Skogsberg does not give the dimensions of the embryos of his suggested new variety.

In view of Skogsberg's suggestion I also compared the new form with a young *G. mülleri* of approximately the same size from the " Discovery " collection and also with the young specimen from Station 131 in this collection, and there is no doubt whatever that it cannot be considered as a small form of *G. mülleri*. The antennal notch certainly resembles that of a young *G. mülleri*, but then the shape of the shell is much more ovoid. However, the most marked distinguishing features are (1) that even the young *G. mülleri* has more numerous cleaning bristles which are all pectinate on the mandible, and (2) the second trunk limb has no teeth in the comb at this young stage, whereas the new form has 40, and (3) the bristles bear at the most four bells.

For diagnostic purposes the shape of the shell is of value only if the specimen is undistorted. More often than not, however, in this genus the valves are considerably crushed, so that the real profile of the animal cannot be settled. At the same time also the armature of the antennal notch is useless, as it is the same as that of a young *G. mülleri*. In this case the easiest distinguishing characters are the comb on the second trunk limb and the absence of pectinate bristles on the mandible. Both these points can be settled from the isolated limbs. The further diagnostic features require the dissection of the individual limbs.

From the fact that Skogsberg's specimens were collected in the Atlantic Ocean in an open net fishing at 1500 metres while the type specimen was collected in the Indian Ocean also at a great depth, it appears that this is a widespread species similar in this respect to *G. mülleri*.

In shape the specimen reminded me of the egg of a snake. I accordingly am naming it *G. dracontovalis*.

## Family Halocypridæ.

### Sub-family Conchœcinæ.

#### Genus *Halocypris*.

*Halocypris globosa* (Claus).

Occurrence :

St. 131. N. 100. 500–0 m. Vertical haul. One.
St. 172. N. 100. 200–0 m. 510 m.w.o. One (juv.).

#### Genus *Conchœcia*.

*Conchœcia caudata* G. W. Müller.

Occurrence :

St. 131. N. 100. 1500–0 m. Vertical haul. Two ♀.
St. 172. N. 100. 400–0 m. 820 m.w.o. One ♂.

*Conchœcia atlantica* (Lubbock).

St. 96. N. 200. 400–645 m. 919 m.w.o. Nine.
St. 131. N. 100. 500–0 m. Vertical haul. One.
St. 131. N. 100. 1500–0 m. Vertical haul. Two.
St. 172. N. 100. 200–0 m. 510 m.w.o. One + three (juv.).
St. 172. N. 100. 400–0 m. 820 m.w.o. Twenty.
St. 172. N. 100. 850–0 m. 1500 m.w.o. Seventeen.
St. 186. N. 100. 250–0 m. 510 m.w.o. Three.
St. 186. N. 100. 575–0 m. 880 m.w.o. Two.
St. 186. N. 100. 600–0 m. 1150 m.w.o. Fourteen.

*Conchœcia plinthina* G. W. Müller.

St. 61. N. 100. 1500–0 m. 1699 m.w.o. One ♀ + three (juv.).

*Conchœcia imbricata* (G. Brady).

St. 96. N. 200. 400–645 m. 919 m.w.o. One ♀.

*Conchœcia alata* G. W. Müller.

St. 76. N. 100. 600 m. 800 m.w.o. One.
St. 76. N. 100. 1500 m. 1800 m.w.o. Three.
St. 172. N. 100. 200–0 m. 510 m.w.o. Six.
St. 172. N. 100. 400–0 m. 820 m.w.o. Three.
St. 172. N. 100. 850–0 m. 1500 m.w.o. Ten.
St. 186. N. 100. 250–0 m. 510 m.w.o. One.
St. 186. N. 100. 575–0 m. 880 m.w.o. Two.
St. 186. N. 100. 600–0 m. 1150 m.w.o. Thirty-two.

*Conchœcia daphnoides* (Claus) var. *minor* G. W. Müller.

St. 96. N. 200. 400–645 m. 919 m.w.o. One ♀.

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